

WHAT IS CLAIMED IS:

1. A compressor assembly for compressing a vapor, said compressor assembly comprising:

a first compression mechanism and a first motor operably coupled to said first compression mechanism, said first compression mechanism compressing the vapor from a low pressure to an intermediate pressure;

a second compression mechanism and a second motor operably coupled to said second compression mechanism, said second compression mechanism compressing the vapor from the intermediate pressure to a discharge pressure;

an electrical circuit supplying electrical current to said first and second motors during operation of said compressor assembly, said electrical circuit including a current-initiating device configured to, during start-up of said compressor assembly, initiate the supply of electrical current to said first motor at a first time and initiate the supply of electrical current to said second motor at a second time wherein said first time precedes said second time by a time lapse.

2. The compressor assembly of Claim 1 wherein said first compression mechanism and said first motor are housed in a first housing and said second compression mechanism and said second motor are housed in a second housing.

3. The compressor assembly of Claim 1 wherein said first compression mechanism and said first motor and said second compression mechanism and said second motor are housed in a single housing.

4. The compressor assembly of Claim 1 wherein said current-initiating device includes a time delay relay operably disposed in the electrical circuit between a power source and said second motor.

5. The compressor assembly of Claim 1 wherein said time lapse is provided with a predetermined value that is selected to allow said first motor to reach a stable operating state prior to initiating the supply of current to said second motor.

6. The compressor assembly of Claim 1 wherein said time lapse is approximately between 2 seconds and 5 seconds.

7. The compressor assembly of Claim 1 wherein said first motor and said second motor comprise single speed motors.

8. A compressor assembly for compressing a vapor, said compressor assembly comprising:

a first housing;

a first compression mechanism and a first motor operably coupled to said first compression mechanism, said first compression mechanism compressing the vapor from a low pressure to an intermediate pressure, said first compression mechanism and said first motor mounted in said first housing;

a second housing;

a second compression mechanism and a second motor operably coupled to said second compression mechanism, said second compression mechanism compressing the vapor from the intermediate pressure to a discharge pressure, said second compression mechanism and said second motor mounted in said second housing; and

an electrical circuit supplying electrical current to said first and second motors during operation of said compressor assembly, said electrical circuit including means for, during start-up of said compressor assembly, initiating the supply of electrical current to said first motor at a first time and initiating the supply of electrical current to said second motor at a second time wherein said first time precedes said second time by a time lapse.

9. The compressor assembly of Claim 8 wherein said means comprise a time delay relay disposed in the electrical circuit between a power source and said second motor.

10. The compressor assembly of Claim 8 wherein said time lapse is provided with a predetermined value that is selected to allow said first motor to reach a stable operating state prior to initiating the supply of current to said second motor.

11. The compressor assembly of Claim 8 wherein said time lapse is approximately between 2 seconds and 5 seconds.

12. The compressor assembly of Claim 8 wherein said first motor and said second motor comprise single speed motors.

13. A compressor assembly for compressing a vapor, said compressor assembly comprising:

a housing;

a first compression mechanism and a first motor operably coupled to

said first compression mechanism, said first compression mechanism compressing the vapor from a low pressure to an intermediate pressure, said first compression mechanism and said first motor mounted in said housing;

    a second compression mechanism and a second motor operably coupled to said second compression mechanism, said second compression mechanism compressing the vapor from the intermediate pressure to a discharge pressure, said second compression mechanism and said second motor mounted in said housing; and

    an electrical circuit supplying electrical current to said first and second motors during operation of said compressor assembly, said electrical circuit including means for, during start-up of said compressor assembly, initiating the supply of electrical current to said first motor at a first time and initiating the supply of electrical current to said second motor at a second time wherein said first time precedes said second time by a time lapse.

14. The compressor assembly of Claim 13 wherein said means comprise a time delay relay disposed in the electrical circuit between a power source and said second motor.

15. The compressor assembly of Claim 13 wherein said time lapse is provided with a predetermined value that is selected to allow said first motor to reach a stable operating state prior to initiating the supply of current to said second motor.

16. The compressor assembly of Claim 13 wherein said time lapse is approximately between 2 seconds and 5 seconds.

17. The compressor assembly of Claim 13 wherein said first motor and said second motor comprise single speed motors.

18. A method of initiating operation of a multi-stage compressor assembly, said method comprising:

    providing a first motor for driving a first compression mechanism, said first compression mechanism compressing a vapor from a first, low pressure to a second, intermediate pressure during operation of said first compression mechanism;

    providing a second motor for driving a second compression

mechanism, said second compression mechanism compressing the vapor from the second, intermediate pressure to a third, discharge pressure during operation of said second compression mechanism; supplying electrical current to said first motor to initiate operation of said first motor at a first time; and

supplying electrical current to said second motor to initiate operation of said second motor at a second time wherein said first time precedes said second time by a time lapse.

19. The method of Claim 18 wherein during operation of said compressor assembly, said first and second motors are each operated at a single speed.

20. The method of Claim 18 wherein said first motor and said first compression mechanism and said second motor and said second compression mechanism are all mounted in a single housing.

21. The method of Claim 18 wherein a time delay relay is provided in an electrical circuit coupled to said second motor to delay the supply of electrical current to said second motor.

22. The method of Claim 18 comprising the further step of selecting a predetermined value of said time lapse to allow said first motor to reach a stable operating state prior to said second time.

23. The method of Claim 18, wherein said time lapse is approximately between 2 seconds and 5 seconds.